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Dictyophlois reticulata gen. et sp. nov.

AUG. F. FOERSTE

(WITH PLATE 33)

The name *Stigmaria ficoides* Brongniart at present does service in designating the so-called roots of both of the genera of stems known as *Lepidodendron* and *Sigillaria*. Not only have these roots been found in direct connection with the *Lepidodendron* and *Sigillaria* stems but it has been found impossible so far to discover any specific or generic differences in the roots so connected.

The genus *Lepidodendron* makes its appearance in the Lower Devonian and dies out in the Permian. Recently Dr. David White has called my attention to the fact that in Mississippian or Subcarboniferous specimens of *Stigmaria ficoides* the characteristic round scars, indicating the points of attachment of the so-called rootlets, are distinctly smaller than in Pennsylvanian or Coal Measure representatives passing under the same name.

Students of the microscopic structure of *Stigmaria* and of its rootlet-like appendages, regard the latter as homologous with the monarch roots of certain living plants, so that the main axes of the so-called roots known as *Stigmaria* should be known as rhizophores rather than roots. There is a possibility that these rhizophores represent underground stems, but this still is a debatable question.

In the vicinity of Sample, two miles east of Stephensport, Breckenridge County, western Kentucky, the rhizophores of both *Stigmaria ficoides* and of an undescribed but related genus occur in one of the sandstone layers belonging to the lower part of the Chester division of Subcarboniferous rocks.

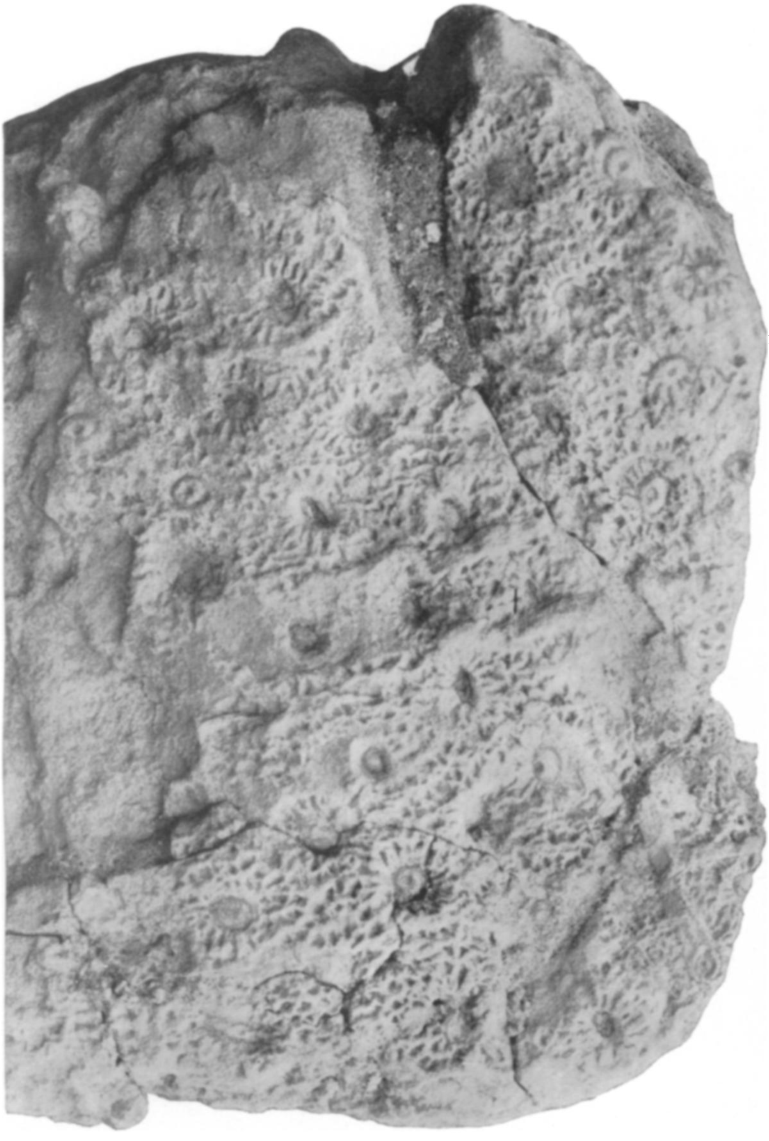
The undescribed rhizophores resemble those of *Stigmaria ficoides* in possessing small ring-like areas of attachment of the monarch roots, the latter being arranged in diagonally intersecting rows. In several of these ring-like areas a minute central point could be recognized, but the smaller ring, which in *Stigmaria* intervenes between this central point and the larger ring, could not be identified with certainty in any case.

These undescribed rhizophores differ from those of *Stigmaria* in having the areas between the ring-like scars of attachment of the monarch roots marked by irregular ridge-like elevations and depressions presenting the appearance of an irregular network. In the immediate vicinity of the ring-like scars the ridge-like elevations of this network tend to be arranged in radiating series. The network evidently is a characteristic of the outer cortex, hence the name *Dictyophlois reticulata*, here proposed for the rhizophores in question. No explanation based on evidence can be assigned at present for the reticulate appearance of the surface of this outer cortex. But, if these rhizophores are homologous with subterranean stems rather than with roots, the reticulate structure may be connected with the former presence of more or less appressed scales, of which, however, there is no positive evidence in *Dictyophlois;* in *Stigmaria* the former presence of appressed scales seems impossible since the outer cortex of the rhizophores in the latter genus is smooth.

The specimens of *Dictyophlois* here described and figured were discovered about ten years ago and were retained in the hope that further evidence regarding their structure might be obtained. Since this delay has not been attended by any additional information the accompanying illustration is published in the hopes that it may arouse interest in other paleobotanists. If *Dictyophlois* is indeed an underground scale-bearing stem then these scales should be found sooner or later still attached to the rhizophores.

Dictyophlois reticulata gen. et sp. nov.

Original diameter of rhizophores varying from 10 cm. to 15 cm. The figured specimen (type) is a flattened fragment 10 cm. in length and 13 cm. in width, exposing a part of one side of a rhizophore, the original diameter of which is unknown. Round areas of attachment of the so-called rootlets usually 3.5–4 mm. in width, but not infrequently attaining a length of 5 mm.; with a small central pit about 0.75 mm. in diameter. These areas are arranged in diagonally intersecting series, five areas occupying a length of 60–80 mm. measured along the diagonal rows. For a distance of 3–4 mm. from the margins of these round areas of attachment the raised ridges forming the intermediate



DICTYOPHLOIS RETICULATA FOERSTE

network tend to be arranged in a more or less radiating manner. In the more distant parts of the intermediate area these ridges form a more irregularly reticulated network. Measured along the crests of the ridges, the meshes of the network frequently attain a length of 3 mm. and a width of 2 mm.; the included space frequently attains a depth of 1–1.5 mm., narrowing toward the bottom, so as to form an irregular funnel-like pit.

Type specimen in the possession of the writer.

KENTUCKY: Sample, Breckenridge County.

DAYTON, OHIO

Explanation of plate 33

DICTYOPHLOIS RETICULATA Foerste

Type specimen, collected at Sample, Breckenridge County, Kentucky. Natural size.